

REMARKS

This Amendment responds to the Action dated August 26, 2009, wherein claims 1-2, 4-6, 8-10, 12-19, 23, 24, 26 and 40 were rejected as being unpatentable over Alyeshmerni et al. (WO 00/76941 A1) in view of Dean et al. (US 6,245,717 B1) and Freepons (US 5,139,555). The Applicant respectfully traverses the Examiner's rejection, and reconsideration of this application in view of the amendments made herein is respectfully requested.

Independent claim 1 and dependent claims 2, 4-6, 8-10, 12-19, 23, 24 and 26 have been amended; independent claim 40 has been canceled (claims 28-39 have been withdrawn as being directed to a non-elected invention). The Applicant respectfully directs the attention of the Examiner to amended claim 1, which has been re-cast as a product-by-process claim so as to better characterize the structure implied by the process steps, and which now reads as follows:

1. *A solid, granular, free-flowing, water-soluble agrochemical composition, which does not leave harmful or useless deposit in the soil, said granular composition containing the following components:*

- a) *phosphorous acid (H_3PO_3);*
- b) *at least one other NPK nutrient;*
- c) *metal microelements; and*
- d) *a base selected from potassium carbonate and potassium hydroxide;*

said granular agrochemical composition being manufactured according to a process comprising a step wherein components b), c) and d) are mixed into molten

component a) and homogenized at a temperature of 60°C to 100°C, thereby conferring to said granular composition a low hygroscopicity as expressed by a critical relative humidity (CRH) of between 50 and 65%, and a water content of between 0 and 1%.

Amended claim 1 is supported in the description as filed for example from page 4, line 2 to page 5, line 2.

The technical problem to be solved by the present invention is to provide a phosphate containing agrochemical composition which is solid, granular, free-flowing, water-soluble (page 2, lines 15-17), which does not leave harmful or useless deposit in the soil, and which has a low water content (page 7, lines 17-18) and a low hygroscopy (page 6, line 12) to minimize caking issues (see Examples). To this purpose, the product of claim 1 is produced by a specific process which consists in mixing at least one NPK nutrient, metal microelements, and a base, into a molten solution of phosphorous acid, at specific conditions of temperature.

As explained in the additional reference cited by the Examiner on page 10, line 8 of the Office Action, namely Rutland, *Fertilizer Research*, 30:99-114 (1991) (hereinafter “Rutland”), there are many caking factors including moisture content (see p.100, col.1, lines 19-21 of Rutland) and hygroscopicity (p.100, col.2, lines 12-29) of the fertilizing granular composition. Rutland also points out that the particle structure and the chemical composition of said fertilizer are factors that have to be considered as far as caking issues are concerned (see Rutland's Abstract). The instant invention provides a

granular agrochemical composition which is chemically homogeneous and shows a critical relative humidity of between 50 and 65% as well as a water content of between 0 and 1%. All these properties would be recognized by any person skilled in the art, merely in view of *Rutland*, as critical to reduce caking tendency during storage.

Alyeshmerni relates to potassium phosphite fertilizer formulations, processes for producing them, and methods to deliver them to plants (page 5, line 29-33).

Alyeshmerni does not relate specifically to caking issues and only recommends storing the fertilizer in a cool and dry location (see, for example, page 24, lines 15-16).

Alyeshmerni neither teaches nor suggests granular agrochemical compositions made out of a molten solution of phosphorous acid.

Dean et al. teach agrochemical compositions that may also comprise humic acid (column 8, line 66), micronutrients (column 6, lines 62-64) and complexing agents (column 7, line 60-end to column 8, lines 1-24). Dean et al. teach compositions in the form of a granule (col.4, lines 57) but do not relate specifically to caking issues. Furthermore, Dean et al. neither teach nor suggest granular agrochemical compositions made out of a molten solution of phosphorous acid.

Freepons relates to a process of furnishing slow release nitrogen to field soil, comprising inserting and distributing in the soil in particulate or granular form melamine, ammeline, cyanuric acid, mixtures thereof, their salts, and mixtures thereof. The granules of Freepons comprise a poorly soluble nitrogen source and a binder (column 7,

lines 54-56). The purpose of Freepons is to provide a slow release nitrogen composition to field soil (see Freepons' Abstract) and is not especially concerned by caking issues. Freepons mentions various binders, even molten binders, but only for aggregating water insoluble nitrogen-containing particles and to form a compact, solid product. Freepons never aims to enhance anticaking properties and does not teach or suggest phosphorous acid as potential molten binder.

Therefore, starting from Alyeshmehri, it would not have been obvious for a person skilled in the art to form a granular agrochemical composition by mixing and homogenizing water soluble ingredients in a molten solution of phosphorous acid. The granular composition of the Applicant's invention, resulting from the solidification of a molten mixture of phosphorous acid and water soluble ingredients, is clearly structurally different than those disclosed in any of the cited prior art publications, and shows properties such as a low water content of between 0 and 1% and a low hygroscopicity characterized by a CRH of between 50 and 60%, resulting in non-caking character. These properties would not be expected by a skilled person in view of the cited prior art. Therefore, the composition of the invention differs from the prior art compositions in that it is formed from a continuous phase of phosphorous acid in which other components are dispersed. This feature can be easily corroborated by analytical methods, e.g. microscopy.

As recited in MPEP §2113, the structure implied by the process steps should be considered when assessing the patentability of product-by-process claims over the prior

art, especially where the product can only be defined by the process steps by which the product is made, or where the manufacturing process would be expected to impart distinctive structural characteristics to the final product. *In re Garnero*, 412 F. 2d 276, 279, 162 U.S.P.Q. 221, 223 (CCPA 1979).

Furthermore, it is submitted that it is improper, having read the Applicant's disclosure, to use hindsight to "pick and choose" among isolated prior art references to disparage the claimed invention (*see, In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir.1988)). Even where an invention is, as a whole, fully disclosed by a combination of prior art elements, such elements cannot be combined to defeat patentability as obvious unless the art teaches or suggests the desirability of making the combination (*see, ASC Hospital Systems, Inc. v. Montefiore Hospital*, 732 F.2d 1572, 221, U.S.P.Q. 929 (Fed. Cir. 1984)). Thus, the mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification (*see, In re Fritch*, 972 F.2d 1260, U.S.P.Q.2d 1780 (Fed. Cir.1992)). Finally, it is the invention as a whole that is important. Focusing on the obviousness of substitutions and differences, instead of on the invention as a whole, is a legally improper way to simplify the often difficult determination of obviousness (*see, Gillette Co. v. S. C. Johnson & Son Inc.*, 919 F. 2d 720, 16 U.S.P.Q. 1923 (Fed. Cir. 1990)).

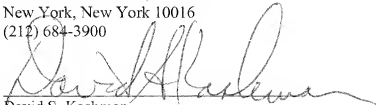
In view of the above arguments and amendments, the Applicant respectfully submits that the invention, as described in the present claims, is novel and non-obvious

over the cited documents, either taken alone or in combination. The agrochemical composition formed by a continuous phase of phosphorous acid in which other components are dispersed has surprisingly advantageous properties. It is therefore believed that the instant claims are now ready for allowance, and early and favorable action is respectfully requested.

The required retroactive petition for a one-month extension of time in which to file a response to the outstanding final Office Action has been submitted in conjunction with the Request for Continued Examination submitted concurrently herewith, and the official fee of \$130.00 as prescribed for that extension by 37 C.F.R. 1.17(a)(1), as amended, in the case of a non-small entity, has also been submitted along with the official fee associated with that Request for Continued Examination. The accompanying Request for Continued Examination also authorizes the Commissioner to charge any additional extension fees that may be required, or to credit any overpayment, to the Deposit Account of undersigned counsel.

Respectfully submitted,

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